



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,602	09/23/2003	Chang-Seob Kim	61610096US	9753
58027	7590	04/11/2006	EXAMINER	
H.C. PARK & ASSOCIATES, PLC			ALEJANDRO, RAYMOND	
8500 LEESBURG PIKE			ART UNIT	
SUITE 7500			PAPER NUMBER	
VIENNA, VA 22182			1745	

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/667,602	Applicant(s) KIM, CHANG-SEOB	
	Examiner Raymond Alejandro	Art Unit 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 10-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/23/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

***Election/Restrictions***

1. Applicant's election with traverse of Group I and Species 1 (claims 1-3 and 7-9) in the reply filed on 04/05/06 is acknowledged. The traversal is on the ground(s) that *"the subject matter of all claims is sufficiently related that a through search for the subject matter of any one group of claims would encompass a search for the subject matter of the remaining claims"*. This is not found persuasive because the particular search for the elected claims is not required for non-elected claims, that is, the search required for Group I (classified in class 204/282) is not particularly required for Group II (classified in class 429/61/161). As disclosed by the applicants, the inventive concepts involve both the electrode assembly and the lithium-ion cell. Thus, since the restriction requirement has been treated as a combination-subcombination, it is further noted that the inventions are distinct because the combination of Group II does not require the particulars of the subcombinations for patentability, for example, the combination (the lithium ion cell) can use any of the specific subcombination embodiments as shown in Applicant's Figures 5A-F; additionally, or an electrode assembly where the current limiter is installed on the bottom surface of the can, or inside the cell or outside the cell; and/or an electrode assembly not having the current interrupter per se; and/or a stacked electrode assembly per se (an unwound assembly) with or without current interrupter; and the subcombination has a separate utility such as providing an electrochemical assembly usable in other batteries such as Li-polymer batteries and/or Ni-Cd batteries, Ni-MH batteries and the likes. In addition, the two groups have separate classification, a different field of search and a separate status in the art. Accordingly, serious burden would be raised if the search of the two groups was made as required for the separate and distinct inventions.

With respect to the election of species, it is noted that the embodiments presented in Figures 5A-F reflect mutually exclusive embodiments which do not overlap in scope.

The requirement is still deemed proper and is therefore made **FINAL**.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 11/23/04 was considered by the examiner.

***Drawings***

4. The drawings are objected to because in Figure 4, both reference numerals 32 and 31c point to the same feature (i.e. 32 is the separator per se). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet

Art Unit: 1745

submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to because the protective tape designated as reference numeral 35a for the negative electrode is not shown in Figure 4 as disclosed in paragraph bridging pages 7-8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: while the specification as filed discloses that the negative electrode plate and the negative electrode collector may be made of, for example, copper, it does not disclose that the negative electrode lead per se is made of copper or nickel. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

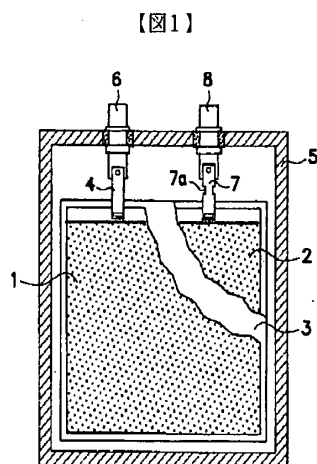
8. Claims 1-3 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese publication 10-214614 (herein called the JP'614).

The present claims are directed to an electrode assembly wherein the disclosed inventive concept comprises the specific current interrupter.

**As to claim 1:**

The JP'614 discloses an electrode assembly comprising a positive electrode 1 and a positive electrode lead 4; a negative electrode 2 and a negative electrode lead 7 (P. 0002/ CLAIM 1/FIGURE 1). The electrode assembly is a laminated (stacked) and wound assembly (P. 0011).

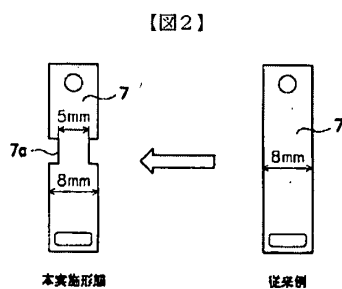
**Figure 1** below illustrates the specific configuration of the electrode assembly:



A constricted portion 7a is made at the center between an upper and lower side of the negative electrode lead 7 (ABSTRACT). Accordingly, as for the negative electrode, the constricted portion 7a sets a current limit (ABSTRACT/ P. 0014-16).

As to claim 2:

As shown in **Figure 2**, section 7a has a smaller cross-sectional area than a cross-sectional area of the negative electrode lead (See Figure 2).



As to claim 3:

It is apparent from **Figure 2** above that section 7a forms a notch and/or an indentation and/or an angular cut in the edge (See Figure 2).

Art Unit: 1745

As to claim 7:

At least, the cross sectional area near section 7a can be represented by 5 mm x L, while the cross sectional area of the negative electrode can be represented by 8mm x L (See Figure 2).

*Thus, the cross sectional area near section 7a is about 0.625 times that of the cross sectional area of the negative electrode.*

As to claim 8:

The negative electrode lead is made of copper (P. 0014).

Thus, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).



Art Unit: 1745

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese publication 10-214614 (herein called the JP'614) as applied to claim 1 above, and further in view of Arai et al 2005/0171383.

The JP'614 is applied, argued and incorporated for the reasons expressed above.

However, the preceding prior art does not expressly disclose the negative electrode lead made of nickel.

Arai et al disclose a battery comprising an electrode assembly including a negative electrode and a positive electrode (P. 0081-0083); wherein the negative electrode lead is made of nickel (P. 0083).

In view of the above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the negative electrode lead made of nickel of Arai et al in the electrode assembly of the JP'614 because nickel is a suitable conducting metal material. Thus, the use of a nickel negative electrode lead allows to maintain good electrical conductivity within the electrode assembly.

### ***Conclusion***

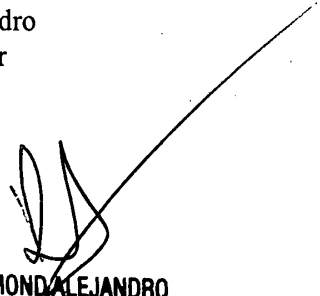
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro  
Primary Examiner  
Art Unit 1745



**RAYMOND ALEJANDRO**  
**PRIMARY EXAMINER**